Station Circular 51 November, 1923

Oregon Agricultural College

Experiment Station

Building Plans and Bill of Materials for O. A. C. 400-Hen Laying House

By
Frank L. Knowlton,
Assistant Poultry Husbandman

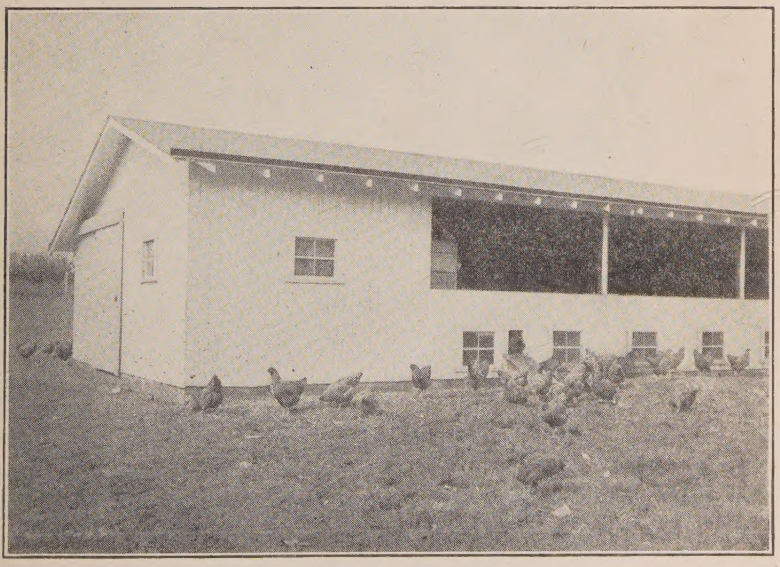
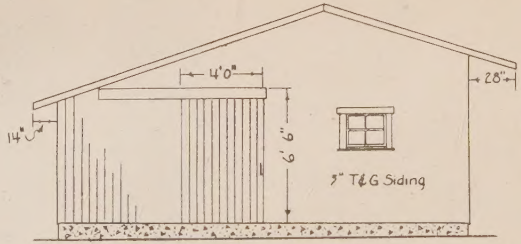
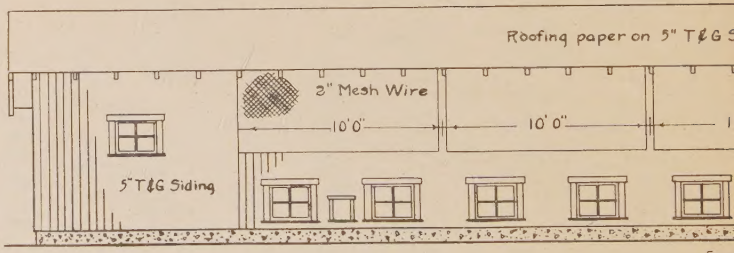


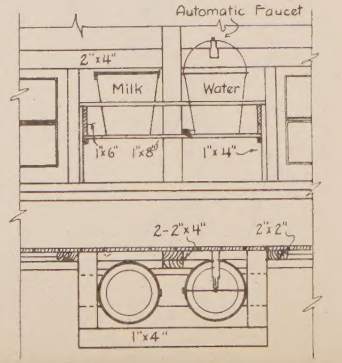
Fig. 1. O. A. C. Laying House.



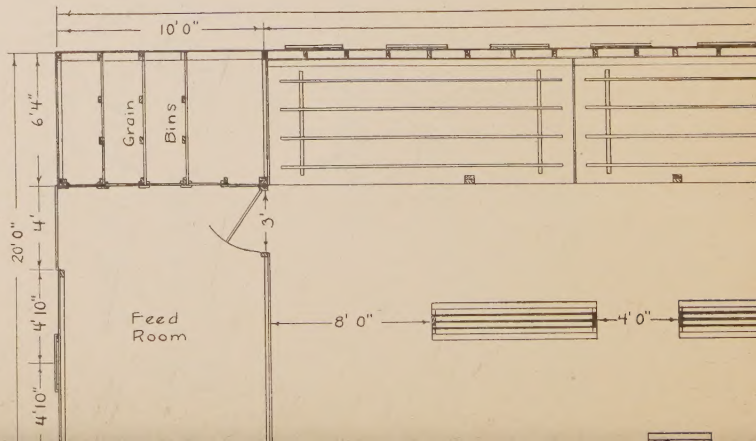
END ELEVATION

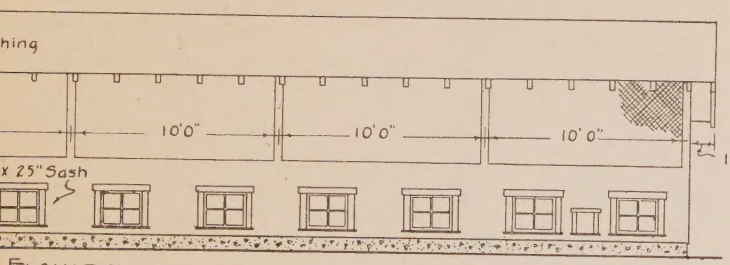


FR

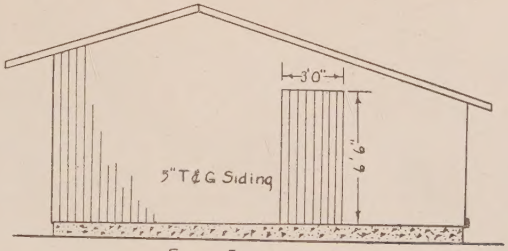


DETAIL OF WATER & MILK

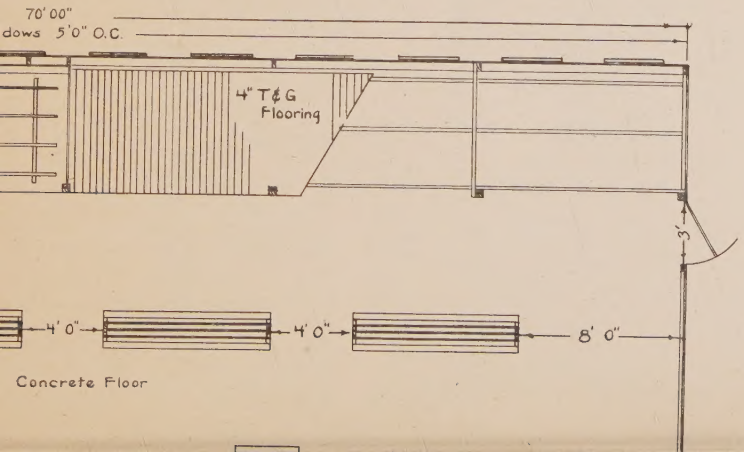


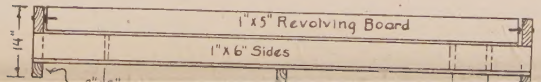


ELEVATION



END ELEVATION





O.A.C. 400-Hen Laying House

The Poultry Husbandry department receives each year hundreds of requests for the building plans of laying houses. The present circular, presenting building plans and the bill of materials for the O. A. C. 400-hen laying house, may now be used in answering these requests. The problems involved in poultry housing will be discussed in a forthcoming general bulletin on that subject.

Dimensions. The O. A. C. 400-hen laying house is 20 feet deep and 70 feet long. This includes a feed room at one end, which is 10 by 20 feet. That portion of the house occupied by the birds is thus 20 feet by 60 feet, which allows 3 square feet of floor space per bird. The house is 6 feet high in the rear, 8 feet in front, and 10 feet 4 inches high in the peak. Roof pitch is 1 in 3.

Floor. In the construction of the concrete floor, the usual foundation walls are omitted, the entire floor being poured at one time, which makes it consist of one large block. (See "detail cross section" in plans.) This block should be in a perfect plane, the front edge of which is $1\frac{3}{4}$ inches lower than the rear edge. This allows for drainage when it is desired to wash the floor. The layer of gravel under the concrete serves to break the contact between the concrete and the earth, thus preventing moisture from coming up through the floor.

Nests. The plans and bill of materials do not provide for nests. This omission has been made because some will wish ordinary nests while others will wish trap-nests.

Ordinary nests can be located on the front of the house between the wire and the windows, or tiered at the ends of the house, or, as a last choice, placed under the dropping boards. From seventy to eighty such nests would be required for this house.

About 100 trap-nests would be required for this house. Thirty of this number can be tiered against each end wall as shown in the pictures, while the remaining forty can be tiered in a battery in the center of the house, or as a last choice, placed under the dropping boards. The plans of the O. A. C. trap-nest are contained in Station Circular 33.

Oiling dropping boards. It is recommended that the dropping boards, before being used, be given two or three coats of flushing oil, a product procurable at any automobile garage. This may be applied with a wide brush or spray. This treatment makes the boards easier to clean and at the same time tends to prevent their warping or swelling with moisture.

Suggestions on construction. The nailing girts in the front, ends, and back of the house should be toe-nailed to the posts and not notched through them, as the notching reduces the strength of the posts too much.

Three strands of wire, four inches apart, parallel with and on the top side of each cross tie, will prevent the birds roosting there. If these wires are to be put in, it will be found best to stretch them before the sheathing is put on, for at that time they can be stapled to the sides of the rafters with great ease.

BILL OF MATERIALS

Floor (Concrete 1:3:5 mix — with topping $\frac{1}{4}$" thick of 1:2 mix)

25 cubic yards gravel for layer under floor	10 cubic yards of sand
22 barrels of Portland cement	13 cubic yards of gravel

Front Wall

6 — 2″x4″x20′ for sill
2 — 2″x4″x10′ for sill
8 — 2″x4″x16′ for posts
3 — 2″x4″x20′ for purlin
1 — 2″x4″x10′ for purlin
3 — 2″x8″x20′ for purlin
1 — 2″x8″x10′ for purlin
14 — 2″x4″x10′ for nailing girts
60 — feet of 48″—2″ mesh poultry wire for front of house
60 — lineal feet quarter round for bottom of wire
310 — board feet 1″x5″ tongue and groove for siding
13 — windows (4 — 8″x10″ glass)
13 — 1″x4″x10′ for framing windows
4 — 2″x2″x12′ for inside window frames

Middle Posts and Purlin

8 — 2″x4″x16′ for posts
3 — 2″x4″x20′ for purlin
1 — 2″x4″x10′ for purlin
3 — 2″x8″x20′ for purlin
1 — 2″x8″x10′ for purlin

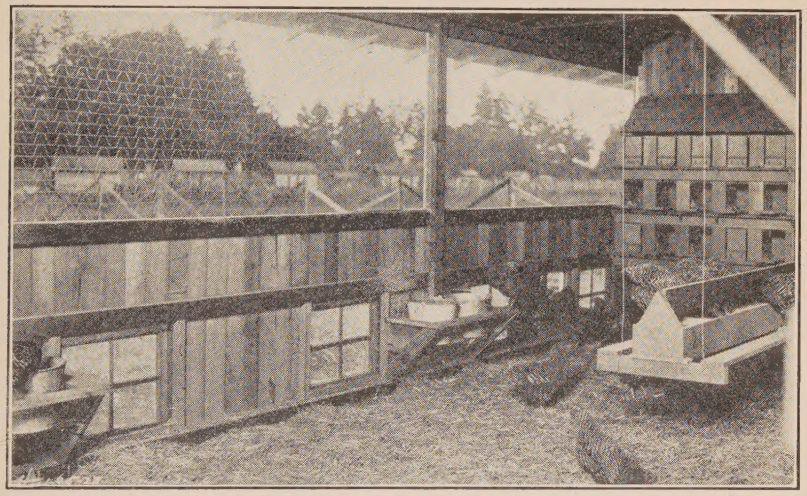


Fig. 2. Inside of O. A. C. Laying House, showing construction of front wall, water and milk shelf, and mash hopper.

Rear Wall

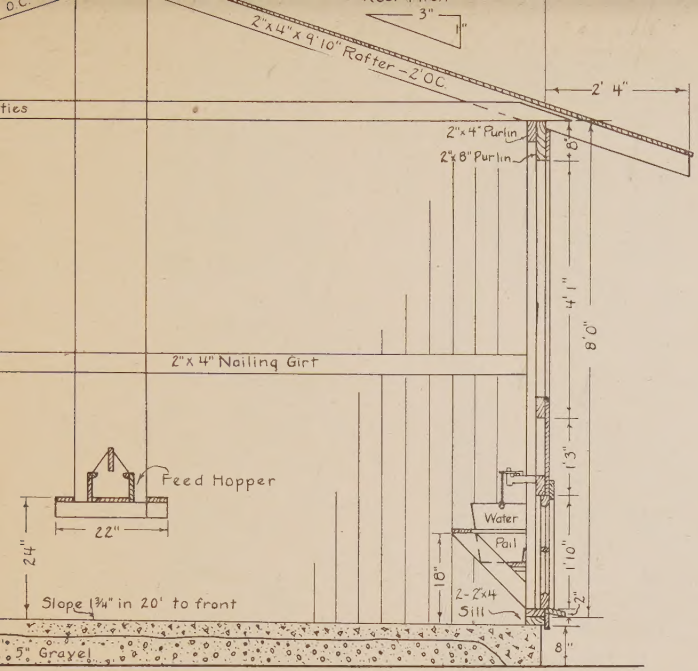
3 — 2″x4″x20′ for sill
1 — 2″x4″x10′ for sill
4 — 2″x4″x12′ for posts
3 — 2″x4″x20′ for purlin
1 — 2″x4″x10′ for purlin
13 — 2″x4″x10′ for nailing girts
500 — board feet 1″x5″ tongue and groove for sidings
12 — windows (4 — 8″x10″ glass)
12 — 1″x4″x10′ for framing windows
4 — 2″x2″x12′ for inside window frames
4 — 2″x4″x14′ for short posts in ventilating device
20 — 1″x8″x12′ (shiplap) for double boarding ventilating device

End Walls and Feed Room Partition

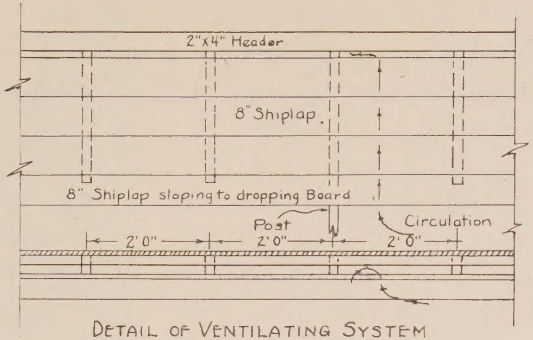
3 — 2″x4″x20′ for sills
3 — 2″x4″x12′ for framing doors
6 — 2″x4″x12′ for nailing girts and braces
3 — 2″x4″x14′ for nailing girts
600 — board feet 1″x5″ tongue and groove for siding and doors
7 — 1″x4″x14′ for door casing and cleats
1 — window (4 — 8″x10″ glass) for feed room end
1 — 1″x4″x10′ for framing window
2 — prs. 6″ strap hinges
2 — 6″ hasps
1 — door bolt
1 — set door rollers and 8 feet of track

Roof

38 — 2″x4″x16′ for rear rafters
38 — 2″x4″x10′ for front rafters
8 — 2″x4″x16′ for cross ties
2300 — board feet 1″x5″ tongue and groove for sheathing
20 — rolls (100 sq. ft. each) 3-ply roofing paper



S SECTION

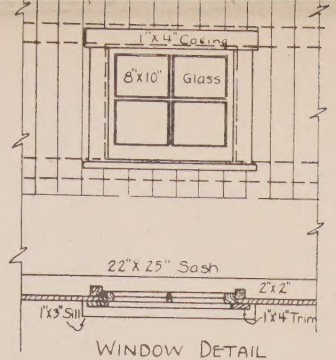


DETAIL OF VENTILATING SYSTEM
IN REAR WALL

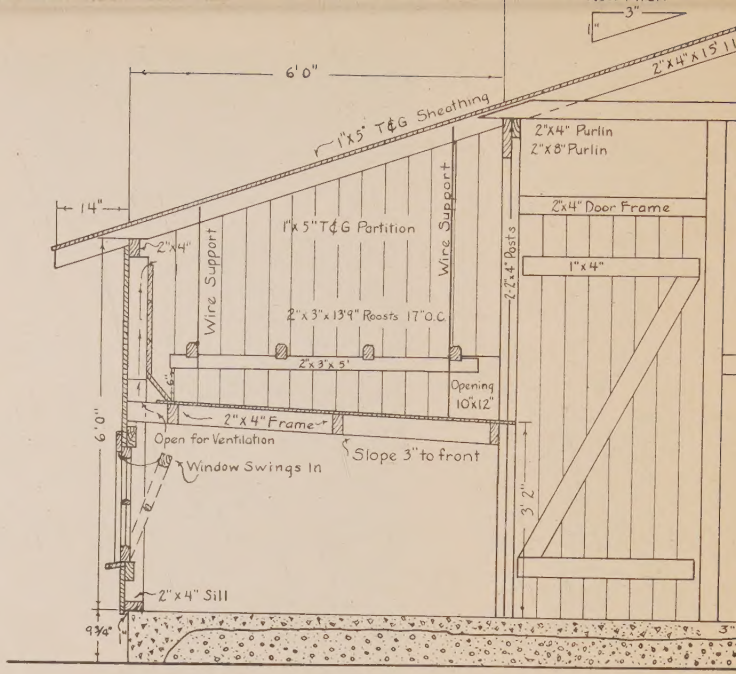
O.A.C.
EXPERIMENT STATION

O.A.C. 400 HEN LAYING HOUSE

Scale: Shown	10/20/23	Drawn by J.H. Peterson



WINDOW DETAIL



DETAIL

Dropping Boards

4 — 2″x4″x12′ for under framing
18 — 2″x4″x10′ for under framing
500 — board feet of 1″x4″ tongue and groove flooring (6,′ 12,′ or 18′ lengths) for dropping board tops
100 — board feet 1″x5″ tongue and groove for partitions

Roosts

4 — 2″x3″x10′ for perch supports
16 — 2″x3″x14′ for perches
100 — lineal feet No. 12 galvanized wire for supporting roosts

Water and Milk Shelf

1 — 1″x6″x10′ for ends
2 — 1″x4″x12′ for treads and braces
1 — 1″x8″x8′ for bottoms

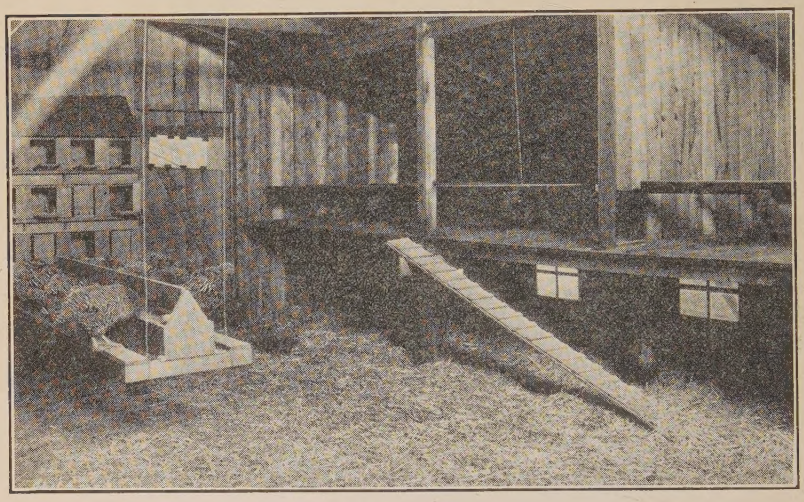


Fig. 3. Inside of O. A. C. Laying House, showing dropping boards and perches.

Mash Hoppers

1 — 2″x8″x10′ for ends
2 — 1″x5″x16′ for revolving boards
2 — 1″x8″x16′ for bottoms
2 — 2″x3″x12′ for bottom supports
4 — 1″x6″x16′ for sides
4 — 1″x4″x16′ for treads
150 — lineal feet No. 12 galvanized wire for hanging hoppers
64 — lineal feet of quarter round for lips.

Feed Bins

2 — 2″x4″x16′ for posts
3 — 2″x4″x14′ for posts
200 — board feet 1″x5″ tongue and groove for partitions
8 — 1″x8″x10′ (shiplap) for fronts

Nails

100 lbs. 8d box
5 lbs. 30d common
25 lbs. 16d common
10 lbs. 6d finishing
10 lbs. 20d common
2 lbs. small staples

SUMMARY

Lumber

6 — 2″x8″x20′ S4S No. 1 Common
8 — 2″x2″x12′ S4S No. 1 Common
3 — 2″x8″x10′ S4S No. 1 Common
4 — 1″x4″x16′ S2S No. 1 Common
21 — 2″x4″x20′ S4S No. 1 Common
7 — 1″x4″x14′ S2S No. 1 Common
64 — 2″x4″x16′ S4S No. 1 Common
2 — 1″x4″x12′ S2S No. 1 Common
10 — 2″x4″x14′ S4S No. 1 Common
26 — 1″x4″x10′ S2S No. 1 Common
17 — 2″x4″x12′ S4S No. 1 Common
2 — 1″x5″x16′ S4S Clear
89 — 2″x4″x10′ S4S No. 1 Common
1 — 1″x6″x10′ S2S No. 1 Common
16 — 2″x3″x14′ S4S No. 1 Common
4 — 1″x6″x16′ S2S No. 1 Common
2 — 2″x3″x12′ S4S No. 1 Common
1 — 1″x8″x 8′ S2S No. 1 Common
4 — 2″x3″x10′ S4S No. 1 Common
2 — 1″x8″x16′ S2S No. 1 Common
8 — 1″x8″x10′ (shiplap) No. 1 Common
20 — 1″x8″x12′ (shiplap) No. 1 Common
124 — lineal feet of quarter round
4010 — board feet 1″x5″ tongue and groove No. 1 Common
450 — board feet 1″x4″ tongue and groove flooring No. 4 Common
26 — windows, 4—8″x10″ glass each
20 — rolls 3-ply roofing paper

Hardware

60 — lineal feet of 48″ — 2″ mesh poultry wire
100 lbs. 8d box nails
250 — lineal feet of No. 12 galvanized wire
25 lbs. 16d common nails
2 — prs. 6″ strap hinges
10 lbs. 20d common nails
2 — 6″ hasps
5 lbs. 30d common nails
1 — door bolt
10 lbs. 6d finishing nails
1 — set door rollers and 8′ of track
2 lbs. small staples